REMARKS

This Amendment is in response to the Office Action mailed on July 23, 2007. In that Office Action, the Examiner rejected claims 1-11, 14 and 21-28. In this Amendment, the paragraph starting at page 2, line 27 has been amended to disclose the status of Application No. 09/495,960. In addition, claims 1-11, 14 and 21-28 remain in this application. Claims 23-26 have been withdrawn as the result of an earlier restriction requirement and Applicant retains the right to present claims 23-26 in a divisional application. Claims 1-3, 7-10, 14, 21 and 28 have been amended, no claims have been added and no claims have been canceled.

Claim Rejections Under 35 U.S.C. §112, First Paragraph

In the Office Action, the Examiner rejected claims 10 and 28 as allegedly failing to comply with the written description requirement. As noted, claims 10 and 28 have been amended. It is believed the amendment to claims 10 and 28 places claims 10 and 28 in allowable form. Therefore, reconsideration and allowance of claims 10 and 28 is respectfully requested.

Claim Rejections under 103(a)

The Office Action rejected claims 1-11, 14, 21, 22, 27 and 28 as allegedly being unpatenable over U.S. Patent No. 3,640,723 issued to Uhlig et al, hereinafter referred to as the "Uhlig patent". According to the Office Action, the Uhlig patent treats soybean meal rather than whole soybeans and there is no patentable distinction between the size of the starting materials. As noted, independent claims 1, 7, 9, 14 and 21 were amended to define, in part, the raw whole vegetable compositions as including a first outer layer connected or in adhesive contact to an inner portion of the vegetable composition. The soya meal of the Uhlig patent does not contain a first outer layer connected or in adhesive contact to an inner portion of the vegetable composition as soya meal is typically prepared from de-hulled soybeans. In general, soybeans are cracked to remove the hulls (seed coat) and then rolled into full-fat flakes. After rolling, oil is extracted the defatted soy flakes are further processed into soybean meal for animal feeding (see Exhibit A of the Amendment). Therefore, the soya meal of the Uhlig patent is not the raw vegetable compositions that include a first outer layer in adhesive contact with the second inner layer or inner portion as defined in pending claims 1, 7, 9, 14 and 21. Since the Uhlig patent teaches

enzymatic treatment of de-hulled soya meal, the Uhlig patent does not teach the present invention as defined in independent claims 1, 7, 9, 14 and 21. Independent claims 1, 7, 9, 14 and 21 are believed allowable in the present form. Since independent claims 1, 7, 9, 14 and 21 are believed allowable in their present form, dependent claims 2-6, 8, 10-11, 22 and 27 are also believed allowable. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-11, 14, 21, 22, 27 and 28 under U.S.C. §103(a) and that claims 1-11, 14, 21, 22, 287 and 28 be allowed.

The Office further rejected claims 1-8, 27 and 28 under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 3,705,810 issued to Lendvay, hereinafter referred to as the "Lendvay patent". According to the Office Action, the Lendvay teaches the addition of cellulase, hemicellulase and/or pectinase to green coffee beans by soaking the green coffee beans in water containing said enzymes. Only claims 1, 7, 14 and 21 will be discussed because if the independent claims are non-obvious then the dependent claims are also non-obvious. See, *In re Fine*, 5 U.S.P.Q.2d at 1600. Before responding to the rejections, a brief summary of the present invention will be provided. The above-referenced application generally teaches the application of aqueous enzymatic compositions to degrade raw whole vegetable compositions that include a first outer layer connected to a second or inner portion of the raw vegetable compositions. Raw whole vegetable compositions with a moisture content of less than about 40 weight percent, such as legumes, nuts, and the like often include high levels of polyphenolic compounds. As disclosed in U.S. Patent No. 5,888,562 issued to Hansen et al at column 2, lines 65 to column 3, lines 4 (see Exhibit B of the Amendment), technical enzymes are sensitive to polyphenols and too high a polyphenolic content significantly inhibits enzyme activity and thus prevent their use. Therefore, if raw whole vegetable compositions that contain substantially modified or processed first outer layers and/or second inner layers or portions are subjected to enzymatic degradation as disclosed in the above-referenced application, enzyme deactivation is expected due to release (leaching) of the polyphenols into the aqueous enzymatic composition.

As discussed in the Amendment of December 5th, 2006, green coffee beans are processed beans that have been sun dried, milled, fermented and pulped. Processing coffee beans by these techniques has the effect of modifying or substantially altering the seed coat of green coffee beans. As a result, the polyphenols that are present in green coffee beans (see Exhibit C of the Amendment) would inhibit enzyme activity and not allow enzymatic modification as the polyphenols would leach out of the processed green coffee beans and into the aqueous enzymatic composition. Therefore, the Lendvay patent does not teach the present invention as defined in pending claims 1-8, 27 and 28.

Independent claims 1, 7, 14 and 21 are believed allowable in their present form. Because claims 2-6 depend from independent claim 1 which is non-obvious, claims 2-6 are also non-obvious. Since claim 8 depends from independent claim 14 which is non-obvious, claim 8 is also non-obvious. Since claims 27 and 28 depend from independent claim 21 which is non-obvious, claims 27 and 28 are also non-obvious. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-8, 27 and 28 under U.S.C. §103(a) and that claims 1-8, 27 and 28 be allowed.

The Office Action also rejected claims 1-11, 14, 21, 22, 27 and 28 as allegedly being unpatentable over U.S. Patent No. 3,845,220 issued to Suzuki, hereinafter referred to as the "Suzuki patent". The Suzuki patent teaches enzymatic modification of coffee liquor derived from parched coffee beans. Parched coffee beans are beans that have been subjected to a long slow boiling step (see Exhibit D of the Amendment) in order to render the beans not fertile (see Exhibit E of the Amendment). Therefore, the parched coffee beans of the Suzuki patent have been substantially processed by long slow boiling. Hence, the Suzuki patent teaches enzymatic modification of coffee liquor obtained from soaking long slowly boiled coffee beans. As discussed in the Amendment of December 5, 2006, the term "raw" refers to vegetable compositions that have not been boiled, cooked or the like. Therefore, for the reasons presented above along with those presented in the Amendment of December 5, 2006, the Suzuki patent does not teach or render obvious the invention as defined in pending claims 1-11, 14, 21, 22, 27 and 28.

Independent claims 1, 7, 14, and 21 are believed allowable. Because claims 2-6 depend from independent claim 1 which is non-obvious, claims 2-6 are also non-obvious. Since claim 8 depends from independent claim 7 which is non-obvious, claims 8 and 11 is also non-obvious. Since claims 27 and 28 depend from independent claim 21 which is non-obvious, claims 27 and 28 are also non-obvious. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-9, 11 and 14 under U.S.C. §103(a) and that claims 1-9, 11 and 14 be allowed.

It is believed claims 1-11, 14 and 21-28 are in allowable form. Consequently, reconsideration and allowance of claims 1-11 and 14 and 21-22, 27-28 is respectfully requested.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Uchenna N. Chukwu	
Appln. No.	:	10/619,403	
Filed	:	July 14, 2003	Group Art Unit: 1761
Title	:	Vegetable Processing	Examiner: Corbin, Arthur L.
Docket No.	:	C514.12-0004	

EXHIBIT A

of

AMENDMENT

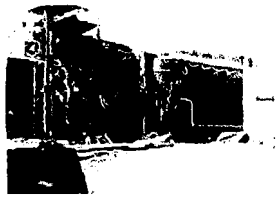
"NSRL: About Soy: Soybean Processing"
"

obtained from http://www.nsrl.uiuc.edu/aboutsoy/soyprocesssing.html

highlighting how soybean meal is prepared.

downloaded on September 23, 2007.

for post harvest disease.



The simplest cleaning method involves tossing the beans into the air and letting the wind carry off the lightest impurities. This cleaning method does not eliminate the heavier impurities. Cleaner-separator machines are used when large quantities of beans are cleaned. They are motor-driven and consist mainly of a reception hopper, a fan and set of vibrating sieves. Cleaning is done by repeated suction of the lightest impurities, followed by siftings of the beans.

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Packaging

Soybeans are generally packed in bags made of either jute, cotton fibers, or plastic. Bag packaging is seldom used in developed countries but it is widespread in developing countries because it is economical and well adapted to local grain-transport and marketing conditions. The type of bag determines the height of the stacks. Generally, the bags are stacked on wooden platforms called pallets, in order to prevent direct contact of bags with the floor. The free space between the top layer of the stacks and the top of the storehouse should be at least 1 meter. Sometimes, small-farmers keep small quantities of soybeans in sealed containers for self-consumption.

Storage

Storage is an important phase of the post harvest system. During this phase, the soybeans are stored in a manner to be readily available and high quality. The main objectives of soybean storage are to permit deferred soybean use, to ensure seed availability for the next crop cycle, to guarantee regular and continuous supplies of raw soybeans for processing industries and to balance the supply and demand of soybean, thereby stabilizing its market price.

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Processed Soybean Uses

Soybeans are grown primarily for meal, and oil is a secondary product. During processing, the soybeans are cracked to remove the hull and then rolled into full-fat flakes. The rolling process disrupts the oil cells, facilitating solvent extraction of the oil. After the oil has been extracted, the solvent is removed, and the flakes are dried, creating defatted soy flakes. While most of the defatted soy flakes are further processed into soybean meal for animal feeding, the flakes can be ground to produce soy flour, sized to produce soy grits or texturized to produce textured vegetable protein (TVP) for food uses. Further processing can produce high protein food ingredients such as soy protein concentrates and isolated soy protein. These ingredients have functional and nutritional applications in various types of bakery, dairy and meat products, infant formulas and the so-called new generation soy foods. Due to this difference in soybean use, two different types of soybeans have emerged: food beans and oil beans (Liu et al. 1995, Orthoefer and Liu 1995; Wilson, 1995).

Soy Processing, Products and How They are Used

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Uchenna N. Chukwu	
Appln. No.	:	10/619,403	
Filed	:	July 14, 2003	Group Art Unit: 1761
Title	:	Vegetable Processing	Examiner: Corbin, Arthur L.
Docket No.	:	C514.12-0004	

EXHIBIT B

of

AMENDMENT

U. S. Patent No. 5,888,562 issued to Hansen et al

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Uchenna N. Chukwu	
Appln. No.	:	10/619,403	
Filed	:	July 14, 2003	Group Art Unit: 1761
Title	:	Vegetable Processing	Examiner: Corbin, Arthur L.
Docket No.	:	C514.12-0004	

EXHIBIT C

of

AMENDMENT

"Green Coffee Bean Extract"

obtained from

http://healthlibrary.epnet.com/GetContent.aspx?token-e0498803-7f62-4563-8d47-5fe33da...

highlighting the presence of polyphenols in green coffee beans.

downloaded on September 23, 2007.

Herbs & Supplements :

Green Coffee Bean Extract

Alternate Names / Related Terms:
- Chlorogenic Acids; GCBE; CGA

Principal Proposed Uses
- Hypertension

Other Proposed Uses
- Weight Loss; Preventing Diabetes

Page Navigation
What Is Green Coffee Bean Extract Used for Today?
Dosage
Safety Issues
References

En Español (Spanish Version)

Just as black tea is made by processing green tea leaves from their original state, ordinary coffee is made by roasting green coffee beans. This processing alters the chemical makeup of the plant product. In an analogy to the medicinal study of green tea , an extract made from green coffee beans is undergoing increasing investigation as a possible health-promoting supplement.

Like green tea, green coffee bean extracts (GCBE) contains strong antioxidants in the polyphenol family. The primary polyphenol antioxidants in green coffee bean extract are in a family known as chlorogenic acids (CGA). Meaningful, if still preliminary, evidence hints that CGA may help reduce blood pressure. Other proposed uses of GCBE are based primarily on its caffeine content, as well as observational studies of ordinary coffee consumption and the possible health benefits of antioxidants in general.

What Is Green Coffee Bean Extract Used for Today?

Animal studies have found evidence that chlorogenic acids from green coffee bean extract can reduce blood pressure. [1] Based on this, researchers have conducted human trials.

In a double-blind, placebo-controlled study of 117 males with mild hypertension , GCBE was given for one month at 46 mg, 93 mg, or 185 mg daily. [2] After 28 days, the results showed a significant improvement in blood pressure as compared to placebo in the 93 mg and 185 mg groups. The results seen were dose-related, meaning that the greater the dose, the greater the improvement. The finding of dose-relatedness tends to increase the likelihood that a studied treatment is actually effective. Antihypertensive benefits were also seen in a much smaller study using purified chlorogenic acids. [3]

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Uchenna N. Chukwu	
Appln. No.	:	10/619,403	
Filed	:	July 14, 2003	Group Art Unit: 1761
Title	:	Vegetable Processing	Examiner: Corbin, Arthur L.
Docket No.	:	C514.12-0004	

EXHIBIT D

of

AMENDMENT

"Black Peas"
obtained from http:/en.wikipedia.org/wiki/Black_peas
highlighting the definition of "parching"
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Black peas

From Wikipedia, the free encyclopedia

Black peas, also called **parched peas** or **maple peas**, form a traditional Lancashire dish served often on or around Bonfire Night (5th November). The dish, popular in Bolton, is made from the black pea (*Lathyrus niger*) which is long soaked overnight and simmered to produce a type of mushy pea. *Parching* is a now defunct term for long slow boiling.

Contents

- 1 Consumption
- 2 Other variations
- 3 Availability
- 4 Black (parched) peas recipe

Consumption

Black peas are commonly found at fairgrounds and mobile food counters. They are traditionally eaten from a cup with salt and vinegar. They can be served hot or cold, the former being especially so in the winter months. At fairgrounds they are served in thick white disposable cups and are eaten with a spoon. Many people fail to re-create the same taste that black peas provide when bought at a funfair, however the recipe is quite simple to follow.

Other variations

Consumption is limited to certain parts of Lancashire, notably the Bolton area. A similar dish, although prepared slightly differently, is made in the north-east of England. *Carlin peas* are a traditional staple of Carlin Sunday (the Sunday before Palm Sunday). Other names given are *pigeon peas* and *brown badgers*. Unlike the Lancashire black peas, Carlin peas are fried with butter for a few minutes and are often boiled for an hour rather than being slow boiled for up to 3 hours.

Availability

The availability of black peas is not steady. They are typically available from the end of October and throughout November. They are available from local stores and also pet shops (as maple peas are a good carp bait) although these may not necessarily be food grade.

Black (parched) peas recipe

Ingredients - 1lb maple peas, water

Method - Wash the peas thoroughly, making sure stones are removed. Leave the peas to soak overnight. Drain. Place in a large pan and fill with water. Bring the water to boil then let it simmer for 2 to 3 hours. Check often and top up with water where necessary. The peas should be eaten soft and accompanied by salt and vinegar to taste. They are served in their own gravy.

Retrieved from "http://en.wikipedia.org/wiki/Black_peas"

Categories: Articles lacking sources from May 2007 | All articles lacking sources | All pages needing to be wikified | Wikify from May 2007 | Lancashire | British cuisine | Legume dishes

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Uchenna N. Chukwu	
Appln. No.	:	10/619,403	
Filed	:	July 14, 2003	Group Art Unit: 1761
Title	:	Vegetable Processing	Examiner: Corbin, Arthur L.
Docket No.	:	C514.12-0004	

EXHIBIT E

of

AMENDMENT

"The Origin of Coffee"
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Consumer Equipment

The Origin Of Coffee

The Origin of Coffee: A Historical Perspective

Coffee, as a beverage, has graced man's taste buds for many centuries. Today, coffee is grown and consumed worldwide, rivaling water as the most widely consumed drink in the world.

Coffee Knowledge:
The Origin Of Coffee
Coffee Talk »
Geographic Origins »
Drink Descriptions »
Roasts and Blends »

Additional Information:
Drink to Your Health »
Coffee For a Cause »
Coffee Alternatives »
Coffee Gift Baskets »
Gourmet Flavored Coffee »

Coffee beans are the twin seeds of a dime-sized red (or occasionally yellow) fruit that grows on plants midsize between a shrub and a tree. Growers refer to these small fruits as "coffee cherries". Coffea arabica, the finest tasting example of the hundreds of coffee species and the one that hooked the world on coffee, is a self-pollinating plant, which has contributed immensely to its ability to resist mutations over the centuries. The Coffea arabica plant of today is nearly identical to the one that originated on the plateaus of Ethiopia hundreds of years ago.

Discovering Coffee Beans

The legend of coffee's origin follows that an Arabian (or Ethiopian, depending on where the story is being told) goatherd named Kaldi discovered his goats dancing joyously around a small, green, dark-leafed shrub full of bright red berries. Kaldi soon discovered that the red berries on the shrub were causing the goats' peculiar behavior. After eating a few himself, Kaldi soon learned first-hand of the berries' powerful effect and too began dancing in excitement. Eventually, a monk from a nearby monastery wandered by on his way to prayer and found Kaldi and his goats dancing by the small green shrub peppered with red berries. Curious as to what was happening, the monk harvested the berries and began to perform experiments on the red fruit. One such experiment involved removing the skin and pulp of the fruit, and parching and boiling the small seeds inside. The liquid that resulted was used to keep the monks awake during long hours of prayer, and was soon distributed to other monasteries around the world.

Whether or not the legend is true, Europeans initially believed coffee originated in Yemen (in southern Arabia), since this was where they first found it cultivated in as early as the 13th century. In fact, Coffea arabica originated in central Ethiopia and was likely brought to Yemen in the sixth century through trade and exchange of agricultural practices.

Spreading Coffee Across the Globe

Once the plant was brought to Yemen, the Arabians monopolized the cultivation of the Coffea arabica plant. They believed the coffee beans to be a delicacy. Protective of their discovery, the Arabians banned the coffee cherries from leaving the country unless they were first parched or boiled so as to no longer be fertile. Dissension came in the form of a Muslim pilgrim from India named Baba Budan who, around 1600, smuggled coffee beans out of Arabia and back to his home in south India, where he then began a coffee farm.

The spread of coffee to European nations was inevitable and swift. The Dutch, French, and Portuguese all became interested in reaping the profitable potential of cultivating coffee. However, various attempts to grow the Coffea arabica plant in Europe failed due to the plant's inability to tolerate frost. The Dutch eventually began growing their coffee in Java, and were able to establish coffee cultivation for a commercial basis by the beginning of the 18th century.

By this time, coffee was available out of two main ports: from Mocha, the main port of Yemen, or from Java. Due to the limited availability of coffee beans, European nobles, and others rich enough to afford exotic luxuries, relished in the everyday pleasure of coffee consumption. Often, the Europeans would blend together the beans from the two separate ports, thus creating a "Mocha Java."

Eventually, the Dutch brought coffee back to Europe when they gifted Louis XIV of France with a Coffea arabica tree in 1715. The Dutch, with great difficulty, obtained the tree at the Arabian port of Mocha, carried it through to Java, then overseas to Holland, and eventually across land to Paris. The first greenhouse in Europe was constructed to house the Coffea arabica tree. Through the careful tending of Louis XIV's botanists, the plant flourished and became supremely prolific.

The billions of offspring from the tree in Paris spread first to Martinique in the Caribbean in 1723. Gabriel Mathieu de Clieu stole coffee trees in Paris with the intention of moving them to Martinique. Fighting broken branches, pirates, and storms, De Clieu finally arrived on the Caribbean island with one fertile seed left. The seedling flourished into a bountiful tree, and by 1770 the cultivation of coffee was established in most of the islands of the Caribbean as well as Haiti and Mexico.

Cultivating Varieties of Coffee Beans

The original tree in Paris also gave rise to a variant of Coffea arabica called Coffea canephora, or Robusta that featured smaller beans and a more robust different growth pattern. The variant occurred through both spontaneous and human-guided mutation, and depends on cross-pollination. The Robusta variety ended up in Brazil and Mexico, giving rise to some of the finest coffees in Latin America today.

Coffee continued to circumnavigate the world, and in 1893 finally ended up in Kenya (now known as Tanzania) through the introduction of coffee beans from Brazil.

It took over six centuries for coffee to leave its mark in almost every continent around the world. Coffee today is vastly cultivated in Asia, North America, Central and South America, Europe, the Pacific, and Africa.

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